

व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ No.: ROTAVATOR-296/2547/2020
माह/Month: October, 2020

THIS TEST REPORT VALID UP TO : 31st OCTOBER, 2027



**SOILTECH, MINI SERIES 3FT ROTAVATOR
(TRACTOR MOUNTED)**



भारत सरकार

Government of India

कृषि एवं किसान कल्याण मंत्रालय

Ministry of Agriculture and Farmers Welfare

कृषि, सहकारिता एवं किसान कल्याण विभाग

Department of Agriculture, Cooperation and Farmers Welfare

उत्तरी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

Northern Region Farm Machinery Training and Testing Institute

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7. FIELD PERFORMANCE TEST

The field tests of the rotavator was conducted for 37 hrs. as recommended by the applicant, **for dry land only**, to assess the performance. The details of performance test is reported in **Annexure-I**.

Observations of field performance test is summarized in the ensuing table:

Summary of Field Performance Test

Sl. No.	Parameters/operations	Dry land operation
I	II	III
1.	Tractor used	Mahindra 215 DI
2.	Gear used	L-1
3.	Type of soil	Sandy Loam
4.	Average soil moisture (%)	11.83 to 19.00
5.	Bulk density of soil (g/cc)	1.719 to 1.850
6.	Average speed of operation (kmph)	1.38 to 1.60
7.	Avg. wheel slip (%)	0.93 to 6.88
8.	Average depth of cut (cm)	11.39 to 12.72
9.	Avg. effective width (cm)	72 to 78
10.	Area covered (ha/h)	0.090 to 0.103
11.	Time required for one ha (h)	9.71 to 11.11
12.	Field efficiency (%)	82 to 86
13.	Fuel consumption	
14.	l/h	1.30 to 1.92
	l/ha	14.44 to 19.00
	Average PTO power utilized (kW)	NR

7. Dry land operation**7.1. Rate of work**

- i) The rate of work was recorded as 0.090 to 0.103 ha/h, and the speed of operation varies from 1.38 to 1.60 kmph
- ii) The time required to cover one hectare was recorded as 9.71 to 11.11 h

7.2 Quality of work

- i) The depth of operation was recorded as 11.39 to 12.72 cm.
- ii) Average effective width was observed as 72 to 78 cm.
- iii) Field efficiency was observed as 82 to 86 %.

7.3 Labour requirement

In all, two skilled operators are needed to ensure continuous operation of rotavator for day long period.

7.4 Wear analysis (on mass basis)

Wear of hatchet blades (on mass basis) was measured and recorded in ensuing table:

Percentage wear of rotavator blades on mass basis

Sl. No.	Initial mass of blade (g)	Mass of blade after 39.55 hr. of operation (g)	Difference of weight (g)	Percentage of wear (%) after 39.55 hr.	Percentage of wear on hour basis (%)
1.	831.6	818.7	12.9	1.551	0.04
2.	832.8	818.0	14.8	1.777	0.05
3.	829.9	823.0	6.9	0.831	0.02
4.	817.6	810.1	7.6	0.929	0.02

8. EFFECTIVENESS OF SEALINGS

Wet Land test was not recommended by the applicant, hence not done.

9. EASE OF OPERATION & ADJUSTMENTS

No noticeable difficulty was observed during the operation and adjustment of rotavator.

10. DEFECTS, BREAKDOWN AND REPAIRS

No noticeable defect or breakdown was observed during the test.

11. CRITICAL TECHNICAL SPECIFICATION


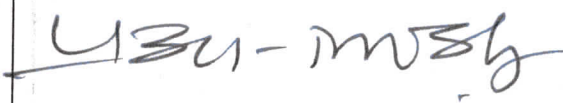
Deferred till 31.12.2020 vide Ministry O.M. No 13-13/2020 M&T, (I&P) dated 24.04.2020



12. COMMENTS AND RECOMMENDATIONS

- 12.1 The Dimension of three point linkage of implement does not conform, in toto, to the requirements of IS: 4468(Part-2)-1993 and therefore, it may be looked into for corrective action.
- 12.2 The chemical composition of blades does not conform, in toto, to the requirements of IS: 6690-1981. This needs to be looked into for corrective action.
- 12.3 The hardness of blades does not conform, to the requirements of IS: 6690-1981. This needs to be looked into for corrective action
- 12.4 Recommended power source is indicated as "12-22 HP" in the specification sheet, at variance with "12-22 KW" as indicated in the labeling plate. **This is misleading to the users** and calls for necessary action.
- 12.5 The grade of grease is not specified. It **MUST** be specified.
- 12.6 Safety guard on P.T.O. drive shaft is not provided. It **MUST** be provided.
- 12.7 The stand is not provided. It **MUST** be provided.
- 12.8 **Technical literature:-**
One booklet entitled "Operator cum Service Manual cum Parts Catalogue" was provided for reference during test. The same, however, needs to be updated as per IS-8132-1999.

TESTING AUTHORITY

RINKU PRASAD GUPTA TECHNICAL ASSISTANT	
P. K. PANDEY DIRECTOR	

13. APPLICANT'S COMMENTS

No comments received from applicant.